

Christopher M. Joe (*pro hac vice* to be filed)
BUETHER JOE & COUNSELORS, LLC
1700 Pacific Avenue, Suite 4750
Dallas, Texas 75201
Telephone: 214-466-1270
Email: Chris.Joe@BJCIPLaw.com

ADDITIONAL ATTORNEYS
LISTED ON LAST PAGE

Attorneys for Plaintiff
Brightex Bio-Photonics, LLC

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION**

BRIGHTEX BIO-PHOTONICS, LLC,

Plaintiff,

vs.

CIVIL ACTION NO. 5:24-cv-07919

L'OREAL USA, INC.,

Defendant.

**PLAINTIFF BRIGHTEX BIO-PHOTONICS, LLC'S
COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Brightex Bio-Photonics, LLC ("BTBP") files this Complaint for patent infringement against Defendant L'Oreal USA, Inc. ("L'Oreal USA"), and alleges as follows:

1. Plaintiff BTBP is a limited liability company organized and existing under the laws of the State of California, with its principal place of business located at 359 Piercy Rd., San Jose, California 95138.

2. BTBP was founded in 2005. BTBP pioneered the combined use of quantitative image analysis, reproducible high-resolution 2D photography, and ultra-high resolution 3D models to provide its customers with flexible and innovative software platforms that utilize

1 machine vision and deep learning algorithms to detect and recognize skin and facial features and
2 other physical features from an image including a face, and based on the features identified, select
3 personalized cosmetic products and skin treatment recommendations. Through extensive research
4 and testing, BTBP has developed significant advancements in these fields, resulting in several
5 patents owned by BTBP. Based on this patented technology, BTBP has offered one of the world's
6 leading and most comprehensive precision facial skin analysis platforms for use in internet and
7 in-store technologies. BTBP's patented technology provides the ability to perform real-time facial
8 skin tracking, precisely identifying the face and facial skin features in live videos or still photos.
9 That patented technology enables companies in the cosmetics and beauty industries to provide
10 validated skin health analysis along with live beauty and skin care try-on transformations.
11

12 3. Defendant L'Oreal USA is a Delaware corporation with its principal executive
13 offices located at 10 Hudson Yards, 30th floor, New York, NY, 10001. L'Oreal USA may be
14 served with process through its registered agent Corporation Service Company, 80 State Street,
15 Albany, NY 12207.
16

17 JURISDICTION AND VENUE

18 4. This is an action for patent infringement arising under the patent laws of the United
19 States of America, Title 35, United States Code. This Court, therefore, has original jurisdiction
20 over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).
21

22 5. L'Oreal USA is subject to the specific personal jurisdiction of this Court.
23 Specifically, BTBP's claims for patent infringement against L'Oreal USA arose from L'Oreal
24 USA's acts of infringement in the State of California, and in this district and division. In
25 particular, L'Oreal USA's acts of infringement include testing and operating interactive websites
26 and other tools using the patented inventions in the State of California, this district and in Santa
27 Clara County. L'Oreal USA also has made those websites and tools available to persons residing
28

1 and located in the State of California, this district and this county. L’Oreal USA, in doing so, has
2 facilitated the sale of products and services through the websites and tools to those persons in
3 those locations.

4 6. In addition, in 2022, L’Oreal USA announced that it was opening a second
5 company headquarters in the forum state of California, located at 888 North Douglas in El
6 Segundo, California. As Stephane Rinderknech, then President and CEO of L’Oreal USA, stated,
7 “[w]e are excited at the prospect of our brand teams coming together to build the future of beauty
8 in the Los Angeles area.” The California activities of L’Oreal USA at its second headquarters are,
9 in part, related to L’Oreal USA’s infringing activities alleged herein.
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11 7. L’Oreal USA also has opened a “tech incubator” in this judicial district, located in
12 San Francisco in 2016. This L’Oreal Technology Incubator has an office located in the City of
13 San Francisco, and includes physicists, engineers UX specialists, hardware designers and data
14 scientists working cross functionally brand and product-wise to help L’Oreal USA evolve from a
15 beauty company to a technology company in the beauty and cosmetic commercial space. In that
16 connection, L’Oreal USA has been directly involved in the development, testing and marketing
17 of virtual try-on technology used by L’Oreal USA that has infringed the patents asserted in this
18 action.
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20 8. Furthermore, in approximately 2023, L’Oreal USA entered into a partnership with
21 the University of California (UC) Berkeley’s Bakar Labs, a leading biotech incubator located in
22 this judicial district. This collaboration opens up avenues for Bakar Labs and L’Oreal USA to
23 benefit mutually from the technological developments of both organizations used in connection
24 with skin analysis and beauty treatments. Bakar Labs is housed in the Bakar BioEngineuity Hub
25 on the UC Berkeley campus and provides over 40,000 square feet of lab and office space for
26 L’Oreal USA and Bakar Labs to collaborate on advanced biological technologies to advance the
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1 biotechnology field across the pharmaceutical and beauty industries and develop new beauty
2 products that improve skin health and address specific skin concerns.

3 9. These L'Oreal USA facilities located in the San Francisco area and at the
4 University of California's Bakar Labs in Berkeley, California are physical, geographical locations
5 in this judicial district from which the business of L'Oreal USA has been and is carried out. These
6 facilities located in the Northern District of California are regular and established places of
7 business of L'Oreal USA.

8
9 10. In view of these facts, this Court has personal jurisdiction over L'Oreal USA under
10 California's long-arm statute, Cal. Civ. Proc. Code § 410.10. L'Oreal USA has purposefully
11 directed its activities toward California, and purposefully availed itself of the privileges of
12 conducting activities in California, and the patent infringement claims asserted in this action arise
13 out of and relate to L'Oreal USA's forum-related activities. Furthermore, the exercise of
14 jurisdiction comports with fair play and substantial justice.

15
16 11. The above facts also establish that venue of this action in the Northern District of
17 California is proper pursuant to 28 U.S.C. § 1400(b). In addition, BTBP's claims for patent
18 infringement in this civil action based on at least some of L'Oreal USA's activities, as alleged
19 herein, arose in Santa Clara County.

20 **BTBP'S DEVELOPMENT OF ADVANCED AND INNOVATIVE TECHNOLOGY**
21 **RELATING TO THE RECOGNITION AND COMPUTERIZED ANALYSIS OF**
22 **FACIAL FEATURES**

23 12. BTBP is a technology company headquartered in Silicon Valley that is dedicated
24 to advancing the skincare, beauty, and makeup industries by providing technology that can capture
25 and analyze images of a person's facial features; and, then by using artificial intelligence, diagnose
26 the conditions or characteristics of features that might warrant further treatment. The technology
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1 can also provide customers with recommendations and virtual visualizations of the application of
2 cosmetics or other products to treat or improve the appearance of those features.

3 13. In 2005, Raj Chhibber, after a successful career in the semiconductor industry,
4 determined that there was an unfulfilled need to improve the ability to scan facial skin features
5 and help identify skin characteristics and conditions that could be treated or otherwise remedied.
6 He also realized that the skincare industry was far behind in using technology to improve its
7 products and services. For example, at the time of BTBP's founding, the industry was still visually
8 comparing images before and after product application with no quantification of skin parameters.
9 Visual grading was used, and books were published to train staff and dermatologists to align their
10 grading scores. This deficient process was known as "blind dermatology" by many researchers
11 in the field. Chhibber and the team he assembled at BTBP determined that even well-trained
12 dermatologists could not agree on grading and classification with the accuracy required to prove
13 product efficacy.
14

15 14. Chhibber researched the matter and determined that inspecting a face for
16 characteristics and conditions required one to closely examine the skin for very small
17 imperfections, which was the best way to conduct a useful diagnosis. This lead Chhibber and his
18 team to develop software for use in a facial image scanner, which BTBP called the "Clarity Pro"
19 system. This software enabled a facial image scanner to identify bacteria-clogging pores, show
20 where wrinkles are forming, and identify skin damage caused by the sun. Chhibber understood
21 that, with this BTBP technology, doctors and aestheticians would be able to recommend creams,
22 lotions and other skin treatment products based on skin condition, and then show patients "before
23 and after" effects of such recommendations. In addition, companies, such as cosmetic companies,
24 could test and quantifiably demonstrate the benefits of such products to their customers.
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1 15. Although the Clarity Pro facial image scanner was a technology targeted for use
2 by beauty spas and dermatologists, Chhibber envisioned refining BTBP's technology to reduce
3 its size and cost and improve its performance so that it could be used in cellphones and laptop type
4 devices by ordinary end-users for personal use. The advanced cameras that smart devices used
5 provided consumers with the ability to take high-quality photography at home. This, coupled with
6 advances in artificial intelligence (AI), allowed BTBP to develop technology that could perform
7 advanced skin measurements and analysis on images or "selfies" taken with commercially
8 available smartphones in order to accurately assess skin conditions to recommend the correct
9 cosmetics and skincare treatments.
10

11 16. As BTBP developed its innovative personalized skin analysis and treatment
12 technology, it applied for and obtained numerous patents covering its advancements in
13 technology. On September 20, 2005, for example, Chhibber and several of his colleagues filed
14 an application for a patent covering a method and system for analyzing skin conditions using
15 digital images. This application resulted in the issuance of United States Patent No. 7,454,046 in
16 2008.
17

18 17. Then, on November 8, 2008, Chhibber and his BTBP colleagues filed a related
19 patent application covering methods and systems for analyzing skin conditions using digital
20 images. This application resulted in the issuance of United States Patent No. 8,155,413 in 2012.
21

22 18. Then, in 2012 and 2013, the patent applications resulting in the patents asserted in
23 this case – United States Patent Nos. 9,842,358 ("the '358 Patent") and 9,542,595 ("the '595
24 Patent") – were applied for and granted in 2017. See Exhibits 1 and 2, respectively. These
25 applications cover electronic devices that capture and analyze digital images depicting facial
26 characteristics. Since 2005, BTBP has obtained 15 United States patents covering the process for
27 capturing and analyzing digital images of a person's face.
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L'OREAL USA'S EXTENSIVE BUSINESS DEALINGS WITH BTBP LEADING UP TO ITS DECISION TO USE BTBP'S PATENTED TECHNOLOGY

19. In 2007, L'Oreal USA and its affiliates had essentially no experience with using software-based skin analysis and treatment technology but wanted to explore using such technology in its business of selling cosmetics and beauty products. In this regard, L'Oreal USA acquired from BTBP a copy of BTBP's Clarity Pro Clinical Research System in late 2007.

20. Prior to the 2007-time-frame, most skin analysis cosmetologists used visual grading techniques. In 2007 and 2008, L'Oreal USA and its affiliates performed initial tests of the BTBP Clarity Pro Clinical Research System and reviewed published studies showing a strong correlation between the results of visual grading techniques and BTBP's Clarity Pro Clinical Research System.

21. In late 2008, L'Oreal USA visited BTBP facilities to see a demonstration of the BTBP Clarity Pro Clinical Research System to learn about the BTBP Clarity Pro system. Daniel Kung, who was L'Oreal USA's Senior Chemical Engineer, contacted Shefali Sharma, Marketing Director for BTBP on July 14, 2009 and indicated that Germain Puccetti's skin team was having "positive experiences ... with BTBP" and expressed interest in moving "towards a formal proposal for some" additional work with BTBP regarding a similar product for his hair team. See Exhibit 3.

22. On April 1, 2009, L'Oreal USA and its affiliates entered into a Mutual Non-Disclosure Agreement with BTBP (the "2009 L'Oreal-BTBP NDA") pursuant to which L'Oreal USA was "considering engaging" BTBP "to perform certain services or supply certain goods" relating to the computerized skin analysis.

23. Pursuant to the 2009 L'Oreal-BTBP NDA, L'Oreal USA and its affiliates held numerous meetings and conferences with BTBP personnel regarding the nature, function, and

operation of the BTBP Clarity Pro Clinical Research System. BTBP disclosed to L'Oreal USA how the Clarity Pro System performed automated skin analysis by analyzing images of skin before and after application of beauty care products. This was done to measure minute changes in the skin caused by the skin and beauty care products. As explained to L'Oreal USA, one of the benefits of the Clarity Pro System was its ability to automatically reposition facial images to ensure the before and after images lined up correctly based on regions of the skin. The system then identified a variety of skin conditions in these skin regions. More specifically, the concept of extracting a skin map (a pixel region within an image that belongs to the subject's skin) from an image using color and intensity information using digital algorithms was disclosed and demonstrated to L'Oreal USA. The concept of sub-categorization was also disclosed and shown to L'Oreal USA (*i.e.*, pores of different sizes were placed into different size/severity categories). L'Oreal USA tested the System by using a pore constrictor on a test subject, which showed that after the use of a pore constrictor, fewer visible pores were present in the largest, most severe category identified by the system. Critically, BTBP also demonstrated the system's ability to detect and measure skin features (such as sunspots and wrinkles) by looking at their color and intensity differences relative to the surrounding skin, rather than by looking at universal color and intensity values. This concept, as disclosed to Defendant, is what allowed the system to tailor its analysis of skin to an individual subject (*i.e.*, person), rather than relying on a single static algorithm for all subjects, ensuring significantly more accurate results. BTBP also disclosed and explained the system's ability to calibrate images of a subject automatically by using a color standard (or chart) that is visible within the image in a static position. This ability allowed for the correction of images by comparing the color standard's recorded values to their known or established values and making automatic corrections to the images to standardize colors between images. This ability, as disclosed to Defendant, also increased the accuracy of the system.

1 24. For example, in May 2009, a scientist from L’Oreal USA by the name of Dr.
2 Germain Puccetti, located in Clark, New Jersey, visited BTBP’s facilities in San Jose, California,
3 to gather information on BTBP systems, and he reviewed images of facial skin obtained using the
4 BTBP Clarity Pro Clinical Research System (“the System”) during that visit to BTBP. L’Oreal
5 USA’s tests using the BTBP technology and systems verified that the Clarity Pro system was able
6 to automatically and accurately measure “before and after” changes in the photographic images
7 of the skin at a quality level comparable to that performed by a professional visual grader of the
8 skin. This meant that studies of facial skin could be made cheaper and faster than visual grading
9 so that a cosmetics company such as L’Oreal USA could get products to market quicker with less
10 overhead. Thus, L’Oreal USA, through testing of the BTBP Clarity Pro Clinical Research System,
11 demonstrated that consumers could automatically find small variations in skin to see and prove
12 small improvements in skin conditions caused by active ingredients.
13

14 25. As L’Oreal USA continued to gather information on the BTBP technology and
15 investigate the BTBP Clarity Pro system, in June 2010, L’Oreal USA personnel again visited
16 BTBP facilities and attended a presentation and demonstration of BTBP instruments used in the
17 System. During this visit, L’Oreal USA brought its Head of US Hair Instrumental Evaluation
18 Fred Cervantes, and the Head of International Hair Jean-Yves Kempf. As one L’Oreal USA
19 Senior Engineer commented in June 2010, “it was great for Fred and Jean-Yves to see the
20 capabilities and potential from collaborating with your company. I am hoping that this will help
21 build momentum for this project.”
22

23 26. In 2011, L’Oreal USA conducted further clinical studies of the BTBP technology
24 using the third-party company International Research Services, Inc. (“IRSI”), which conducted
25 independent research to verify claims concerning cosmetic and skincare companies concerning
26 efficacy of their products. Specifically, L’Oreal contracted out efficacy studies of these products
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1 through IRSI, and IRSI used BTBP's Clarity Pro System for its studies to determine if the claims
2 made as to cosmetic and skincare were accurate.

3 27. Also, during the late 2010-time-period, Dr. Guive Balooch (Dr. Balooch) became
4 the Senior Research Scientist and Innovative Imaging Science and Technology at U.S. Advanced
5 at L'Oreal USA's Clark, New Jersey facility. Dr. Balooch is presently the Global Managing
6 Director of Augmented Beauty and Open Innovation at L'Oreal Worldwide where he leads a
7 global team uncovering and developing "disruptive innovations" through strategic partnerships,
8 investments, and acquisitions for the group. From December 2014 to October 2022, Dr. Balooch
9 was L'Oreal Worldwide Global Vice President and the head of the L'Oreal Global Technology
10 Incubator (GTI) and California Research Center (CRC), with a focus on strategic partnerships
11 with start-ups, investments, and digital/scientific innovations. When L'Oreal USA first began
12 investigating BTBP, Dr. Balooch was among the first L'Oreal representatives to take part in that
13 investigation.
14

15 28. In May 2011, Dr. Balooch announced to Dr. Germain Puccetti at L'Oreal that "I am
16 now in charge of the imaging department at L'Oreal so I am very interested in doing a demo of
17 Clarity Pro and trying to bring it in house to L'Oreal. Can you set up a meeting so I can discuss this
18 with them?"
19

20 29. On July 1, 2011, Dr. Balooch visited BTBP's facilities in San Jose to obtain
21 information on BTBP's technology, and he oversaw a demonstration and planned experiments of
22 the Clarity Pro technology and was provided in-depth information on the new features of the Clarity
23 Pro system. In September of 2011, L'Oreal USA ordered a BTBP Clarity LITE unit for further
24 study, a move which L'Oreal USA asserted would build further "confidence in BTBP."
25

26 30. Near the end of April 2013, L'Oreal USA invited BTBP to visit L'Oreal USA's
27 New York City office for meetings with L'Oreal's Digital Vice President IT, and to make a
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1 presentation regarding BTBP's skin analysis and treatment technology. After BTBP made its
2 presentation, L'Oreal USA decided to conduct a more thorough investigation of BTBP's
3 technology, and, in this regard, entered into another Non-Disclosure Agreement with BTBP (the
4 "April 2013 L'Oreal-BTBP NDA"). The April 2013 L'Oreal-BTBP NDA provided, in part, that
5 L'Oreal USA, "together with its parent, subsidiaries and affiliates," agreed to receive from
6 BTBP "certain confidential and proprietary information" regarding BTBP's skin analysis and
7 treatment technology. Pursuant to this April 2013 L'Oreal-BTBP NDA, L'Oreal USA agreed not
8 to disclose BTBP's confidential and proprietary information to any other party and to use the
9 information only for the purpose exploring a business transaction between the parties for L'Oreal
10 USA to use the BTBP skin analysis and treatment technology in its business. More specifically,
11 BTBP disclosed to L'Oreal USA the initial version of its DeepTag technology, which was an e-
12 diagnostic platform (*i.e.*, an application on a phone or website) capable of performing many of the
13 functions of BTBP's Clarity Pro System in a fraction of the time. BTBP disclosed many aspects
14 of its DeepTag technology to Defendant's personnel, including (1) the concept of a guide to show
15 a user how to take images of their skin in a way that was optimal to skin measurement and analysis,
16 (2) the analysis of user-taken images on remote servers and the division of the face into regions
17 as described in the Clarity Pro System above, (3) the specific algorithms used for facial detection
18 and tracking, (4) the methods by which the DeepTag platform utilized the measurements taken
19 from the user images in order to rank skin conditions in terms of severity and recommend the
20 appropriate products. BTBP also disclosed its methods by which to map skin measurements to
21 specific products for recommendation purposes.

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25 31. BTBP created applications for L'Oreal USA to conduct tests using the DeepTag
26 technology. These applications, as provided to Defendant, had fully functional user interfaces and
27 included BTBP's automated skin analysis systems and real-time image capturing and evaluation
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1 services. These applications took the form of apps installed on L’Oreal smart devices (i.e., cell
2 phones) and applications designed to be accessed via a website URL. L’Oreal USA was
3 particularly interested in understanding how to obtain skin measurements in order to recommend
4 products in order to make sales directly from an application.

5 32. L’Oreal USA and BTBP then entered into an agreement effective November 21,
6 2013, pursuant to which L’Oreal USA contracted with BTBP for BTBP to create and implement
7 what L’Oreal USA called a “customized e-diagnostic platform” for L’Oreal USA brands of
8 cosmetics and beauty products (the “November 2013 L’Oreal E-Diagnostic Platform Agreement”)
9 for two L’Oreal products -- “LRP” and “Garnier.” In particular, the November 2013 L’Oreal E-
10 Diagnostic Platform Agreement specifically provided as follows:
11

12 BTBP has developed an e-diagnostic platform that takes and displays an image of a
13 person which can be viewed to diagnose features of the person that might be improved
14 with the use of products from the Beauty Industry and that permits the person to select
15 and apply such products to the image and then view the results (“E-Diagnostic
16 Platform”). LUSA desires to have BTBP create and implement a customized E-
17 Diagnostic Platform (“LUSA Customized E-Diagnostic Platform”) for the LUSA brands
18 of products identified in **Schedule A** (“LUSA Brands”) and to host the LUSA
19 Customized E-Diagnostic platform on BTBP servers for access by consumers through
20 the various media identified in **Schedule A**.

21 BTBP has agreed to create, implement and host the LUSA Customized E-Diagnostic Platform
22 in accordance with the terms and conditions set forth in this Agreement.

23 BTBP referred to this L’Oreal E-Diagnostic Platform as the BTBP DeepTag platform.

24 33. BTBP then designed and delivered fully functional applications that incorporated
25 BTBP technology for two of L’Oreal’s brands, LRP and Garnier. BTBP worked with these brands
26 to determine their preferred user-interfaces, uploading of products, and testing of the applications.

27 34. For example, testing of the LRP application was to be completed on July 10, 2014,
28 and was scheduled to launch on July 13, 2014. Garnier, by comparison, was scheduled to
complete testing on July 1, 2014, and launch on July 8, 2014. *See Project Timeline.*

1 35. On April 20, 2015, Pritesh Davda (Assistant Vice President of Digital Marketing
2 for L’Oreal USA) informed BTBP that it was working on its own “Skin Genius” application,
3 which was “like what [BTBP] built for LRP.” *See* Email re: Meeting with L’Oreal Brands.

4 **L’OREAL USA’S EXPLOITATION OF OTHER COMPANIES’ AUTOMATED**
5 **SKIN ANALYSIS TECHNOLOGY WHILE DOUBLE DEALING WITH BTBP**

6 36. In June 2014, L’Oreal Paris, a brand of L’Oreal USA, announced “the introduction
7 of the “Makeup Genius” product, which L’Oreal Paris described as “a game-changing app that
8 uses advanced facial mapping technology to turn the front-facing iPhone and iPad camera into a
9 virtual mirror that allows women to try on products in real-time.”

10 37. L’Oreal Paris, explained that the L’Oreal “virtual makeup app, Makeup Genius,
11 was born out of L’Oreal USA’s Connected Beauty Incubator, a new business division based out of
12 L’Oreal’s Research & Innovation labs in Clark, New Jersey, dedicated entirely to technology
13 innovation.” This Clark, New Jersey facility is the L’Oreal USA facility that worked extensively
14 with BTBP to learn details about the BTBP Clarity technology, and then “to create, implement
15 and host the LUSA Customized E-Diagnostic Platform” that “takes and displays an image of a
16 person which can be viewed to diagnose features of the person that might be improved with the
17 use of products from the Beauty Industry and that permits the person to select and apply such
18 products to the image and then view the results.”

19 38. In March 2016, although L’Oreal Paris announced the renewal of this contractual
20 relationship with Image Metrics, it then unceremoniously abandoned that relationship shortly
21 thereafter.

22 39. In 2015, L’Oreal USA and its affiliates announced a strategic partnership with the
23 L’Oreal entities, and the augmented reality technology company known as Modiface to provide a
24 smartphone application to certain L’Oreal branded products. Then, in July 2017, “L’Oreal Paris”
25 announced “a global partnership” with Perfect Corp., the provider of the YouCam smartphone-
26 announced “a global partnership” with Perfect Corp., the provider of the YouCam smartphone-
27 announced “a global partnership” with Perfect Corp., the provider of the YouCam smartphone-
28 announced “a global partnership” with Perfect Corp., the provider of the YouCam smartphone-

1 based app used to provide virtual try-on make up and other beauty products. On the heels of this
2 announcement, L'Oreal and its affiliates began negotiating the outright acquisition of the
3 Modiface entity, effective March 2018, effectively terminating the "partnership" between L'Oreal
4 and Perfect Corp.

5 40. Even after the L'Oreal acquisition of Modiface, in October 2019, L'Oreal USA's
6 parent corporation approached BTBP to discuss whether it could obtain more information on
7 BTBP's automated skin analysis technology and entered into another NDA to learn additional
8 technology to pursue this technology in its business. L'Oreal Paris Headquarters once again
9 contacted BTBP and discussed how they can leverage BTBP's technology. L'Oreal wanted to
10 obtain further information on the features BTBP had added to DeepTag; of specific interest to
11 L'Oreal were measurements related to skin tone and skin color for potential use in accurate
12 makeup and beauty products recommendation. These were new features to the DeepTag platform
13 that BTBP had added since L'Oreal USA's previous contact. As part of the discussions, BTBP
14 provided L'Oreal with additional information under the NDA including sample apps
15 demonstrating the new DeepTag features that showed their accuracy and how the measurements
16 can be integrated into product recommendation. The native apps were installed onto L'Oreal's
17 smart devices and web apps were made accessible to them via URL links.

20 41. Then, in mid-2021, a L'Oreal representative located in India contacted BTBP and
21 inquired about BTBP's capabilities regarding imaging services for skin care products. Before
22 sharing further technical information about DeepTag, BTBP requested that an NDA be signed.
23 After signing at least three prior NDA agreements with BTBP, L'Oreal did not want to sign an
24 NDA in 2021, and communications between L'Oreal and BTBP ended.
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THE ASSERTED BTBP PATENTS

42. Notwithstanding L'Oreal USA's improper misappropriation of BTBP's intellectual property regarding its computerized methods for enabling consumers to acquire and analyze images of faces, BTBP obtained patent rights to those inventions to protect that intellectual property.

43. In particular, in 2011, a company named Own, Inc. ("Own") contacted BTBP about working with Own to develop technology for use in automated skin analysis and skin recommendations.

44. Own was a start-up skin-care company based in San Francisco, California. At the time, Own was engaged in the development, marketing and sales of facial skincare products composed of natural and naturally derived ingredients which were marketed to consumers interested in anti-acne and anti-aging products.

45. Own and BTBP entered into a contract pursuant to which Own hired BTBP to create and license software to serve as a diagnostic tool for use with Own's proposed skin care products to perform automated skin analysis and skin recommendations technology as requested by Own.

46. In connection with the development of this technology, Own filed an application for a patent – Application No. 13/527,578 (the "578 Application") – on June 19, 2012. Before the completion of the prosecution of the application, Own transferred the ownership of the application to BTBP. The '578 Application was issued as U.S. Patent No. 9,842,358 ("the '358 Patent") on December 12, 2017, entitled "Method for Providing Personalized Recommendations."

47. BTBP has been the proper owner by assignment since at least April 17, 2014, and hence, owns all right, title, and interest in the '358 Patent until its expiration date on October 14,

2032, including the right to sue for and recover all past, present, and future damages from infringement of the '358 Patent.

48. One embodiment of the '358 Patent is described in Claim 16, which states as follows:

A computerized method for providing prioritized skin treatment recommendations to a user, comprising:

receiving from an electronic device image data of a user's face, wherein the electronic device comprises a camera and a display, wherein the image data is obtained via said camera, and wherein said electronic device presents on the display a photo guide indicating how the user's face should be positioned with respect to the camera when the image data is obtained;

transforming via a computer said image data via image processing into measurements in order to identify at least two skin characteristics of the user from the received image data;

calculating a severity rating for each of the at least two user skin characteristics by:

accessing stored population information comprising measurements for at least two skin characteristics of a population of the same type as the at least two skin characteristics of the user, wherein each of the measurements for the at least two population skin characteristics comprises a mean value and a standard deviation value;

comparing each of the measurements of the at least two user skin characteristics to the measurements of same type population skin characteristic;

determining by how much each of the measurements of the at least two user skin characteristics deviates from the mean value and the standard deviation value of the same type population skin characteristic;

assigning higher severity rating to the user skin characteristic which deviates furthest than at least one standard deviation of the same type population skin characteristic; and for a subset of the user skin characteristics with the highest severity rating, selecting [one] or more skin treatment recommendations from stored skin treatment recommendations based on the subset of the user skin characteristic with the highest severity rating; and

providing to the electronic device the selected one or more skin treatment recommendations.

1 49. Claim 18 of the '358 Patent claims “the method of claim 16: wherein at least one
2 of the at least two user skin characteristics and the at least two population skin characteristics
3 comprise one or more of: number of wrinkles, number of age spots, quality of age spots,
4 percentage of facial area covered by age spots, number of hyperpigmentation spots, quality of
5 hyperpigmentation spots, percentage of facial area affected by hyperpigmentation spots, number
6 of crow’s feet, number of fine lines, number of deep lines, oiliness of skin, dryness of skin,
7 pigment intensity, pigment darkness, pigment evenness, visibility of pores, number of large pores,
8 lip color, lip line curvature, lip border strength, lip line smoothness, lip fullness, acne lesion
9 visibility, color of acne scars, visibility of acne scars, presence of melasma, percentage of facial
10 area covered by melasma, darkness of melasma, ultraviolet damage, and skin tone.”

12 50. On January 10, 2017, the United States Patent and Trademark Office (“the PTO”)
13 issued U.S. Patent No. 9,542,595 (“the '595 Patent”) entitled “Systems and Methods for
14 Recommending Cosmetic Products for Users with Mobile Devices.” The '595 Patent was filed
15 as Application No. 14/224,659 (“Application No. '659”) on March 25, 2014. Application No. '659
16 was filed as Provisional Application No. 61/805,126 (“Provisional Application No. 126”) entitled
17 “Systems and Methods for Recommending Cosmetic Products for Users with Mobile Devices”
18 on March 25, 2013.

20 51. BTBP has been the owner of the '595 Patent by assignment from the inventors to
21 BTBP since June 24, 2014. BTBP thus has the right to sue for and recover all past, present, and
22 future damages from infringement of the '595 Patent. The '595 Patent will expire on April 18,
23 2034 due to the term being extended by 24 days.

25 52. One embodiment of the '595 Patent is described in Claim 5, which states as
26 follows:

27 A method for analyzing a skin of a subject and identifying a cosmetic product for
28 the subject, comprising:

at an electronic device with one or more processors and memory storing one or more programs for execution by the one or more processors:

calibrating colors of a first digital image, wherein the first digital image depicts at least a portion of a face of the subject, and the first digital image includes a plurality of pixels;

displaying the first digital image;

dividing the display of the first digital image into two sides, wherein one side of the first digital image is displayed with no cosmetic product applied, and one side of the first digital image is displayed with a simulated application of a cosmetic product;

transferring the first digital image; and

transferring information of a cosmetic product, wherein skin pixels in the plurality of pixels are identified, color space values are identified from the skin pixels, and the cosmetic product is identified at least based on the color space values.

THE INNOVATION OF THE ASSERTED PATENTS

53. Claim 16 of the asserted '358 Patent is directed to a novel method for receiving an image of the skin of a person's face, then providing a computer analysis of that image data to identify its skin characteristics that deviate substantially from a group of reference data relating to those skin characteristics, and then providing recommendations to a user for treating those skin conditions based upon the "severity" of the deviations or "ratings." The Claim requires the method to use a "photo guide" to position the capture of the facial image in the camera display.

54. Thus, the claimed invention is not directed to the abstract idea of providing recommendations to a user about a product *per se*.

55. Moreover, in the claimed invention, a computer is **not** invoked merely as a tool, using its generic processes. Instead, it is directed at a specific computerized process that provides for a particular, improved way to acquire an image of a person's face, and then analyze that image data to identify at least two user skin characteristics, and then calculate the extent to which the

1 user's data for at least these two skin characteristics deviate from stored data regarding the same
2 type of skin characteristics (i.e. "severity rating") for a specific group of people.

3 56. The provided skin treatment recommendations, therefore, are based, in part, on the
4 user skin characteristics with highest severity ratings, as determined by a computerized analysis
5 of photo image data, and not previously performed by the use of pen and paper. In particular, the
6 claims require the specified process to be performed using an "electronic device" that "comprises
7 a camera and display."

8
9 57. The claims focus on a specific computerized method for providing skin treatment
10 recommendations to a user based, in part, on the extent of the deviation of the severity of the user's
11 skin characteristics compared to the same type of skin characteristics for a comparable group
12 of people.

13 58. The claimed specific computerized process solved the problem of automatically
14 identifying a user's most severe skin conditions and then recommending a treatment for the
15 condition based, in part, on the highest severity rating of the skin condition. The claims are not
16 directed at the abstract idea of providing skin treatment recommendations to users in general,
17 merely by invoking generic processes and equipment.

18
19 59. The asserted claims improved upon the technology for acquiring and then
20 analyzing facial data for prioritizing product recommendation to treat skin conditions, based in
21 part on the perceived severity of skin condition problems. The specific steps set forth in the
22 asserted claims state how the claims improve the method for identifying the severity of a skin
23 condition and then recommending a treatment for improving the condition, not achieving the
24 recommendation of a product. The asserted claims, therefore, recite a technical solution to a
25 problem arising in the realm of computing networks.
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1 60. During prosecution, the Patent and Trademark Office initially rejected the claims
2 of the '358 Patent under 35 U.S.C. § 101, contending that the claimed invention is directed to
3 the abstract idea of providing recommendations. The '358 Patent issued in 2017, which
4 means this Patent was examined after, and in view of, the Supreme Court's *Alice Corp.*
5 decision on Section 101 of the Patent Act.

6 61. The patentee responded to the aforementioned rejection by pointing out that the
7 invention is a novel computerized method of providing prioritized skin treatment
8 recommendations to users based on a severity rating calculation.

9 62. The patentee further responded that the pending claims of the application for
10 the '358 Patent contain meaningful limitations that represent a sufficiently inventive concept,
11 and that they recite specifically how the recommendations are selected and prioritized based
12 on a specifically calculated severity rating.

13 63. In addition, during prosecution, the claims were eventually amended to require the
14 display of the camera used to perform the specific process to have a "photo guide indicating how
15 the user's face should be positioned with respect to the camera when the image is obtained." These
16 limitations also preclude a pen-and-paper method of implementation.

17 64. In view of the patentee's responses to the PTO's office actions and the amendments
18 to the pending claims of the application for the '358 Patent, the PTO withdrew the rejection of the
19 claims pending claims, including the now issued Claims 16 and 18, under 35 U.S.C. § 101.

20 65. In addition, the PTO, in the first office action during prosecution, rejected the
21 pending claims under pre-AIA 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No.
22 6,571,003 (hereinafter "Hillebrand").

23 66. The patentee responded to this initial rejection under § 102(b) by pointing out
24 that the present invention is a novel computerized method of providing prioritized skin
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1 treatment recommendations to users based on a severity rating calculation not disclosed by
2 Hillebrand or any other prior art.

3 67. In contrast, the patentee explained, Hillebrand failed to calculate a “severity rating”
4 according to the principles of the present invention and to use the severity rating to provide
5 recommendations. In particular, the patentee explained that Hillebrand instead determined “skin
6 severity” for each defected skin area in order to display the individual skin severities or overall
7 skin severity to the user. Hillebrand was not concerned about prioritizing defected skin areas by
8 severity and therefore Hillebrand did not provide any relation between the skin severities of
9 different defected skin areas in order to prioritize for which defected skin area the user would
10 benefit the most from treatment. In addition, while Hillebrand disclosed comparing the severity
11 of the defected areas to an average skin severity of a population of people, Hillebrand failed to
12 disclose that each of the population skin characteristics comprises a mean value as well as a
13 standard deviation value. As such, Hillebrand failed to disclose calculating a severity rating by
14 “determining by how much each of the at least two user skin characteristics deviates from the
15 mean value and the standard deviation value of the same type population skin characteristic” and
16 “assigning higher severity rating to the user skin characteristic which deviates furthest than at least
17 one standard deviation of the same type population skin characteristic,” as required by the relevant
18 pending claims.

19 68. The PTO examiner accepted the patentee’s arguments distinguishing the pending
20 claims from the Hillebrand reference and withdrew his rejection under 35 U.S.C. § 102(b).

21 69. With regard to the ’595 Patent, during prosecution of that patent, the PTO did not
22 reject the claims as invalid under 35 U.S.C. § 101 for any reason.

23 70. The claims of the ’595 Patent are directed at an improved process for calibrating
24 the color values of a portion of a digital image of a person’s face, and then providing a two-sided
25

1 display of a portion of the digital image – first side showing the portion of the digital image with
2 no cosmetic product applied and the second side showing the portion of the digital image with a
3 simulated application of a cosmetic product. The second side image of the simulated cosmetic
4 product is based, in part, on the color space values identified of the first digital image.

5 71. Prior to this invention, consumers were typically relegated to selecting cosmetics
6 and beauty products through the laborious and time-consuming “hit or miss” process of trying on
7 many different products to determine whether a particular product would be the most appropriate
8 and acceptable for the user’s facial features and condition (*e.g.*, skin complexion).

9 72. The ‘595 Patent, therefore, provides a specific technological solution to overcome
10 these drawbacks in the process of selecting cosmetics and beauty products and to improve this
11 process by increasing the speed, quality, accuracy, and consistency of measuring a person’s skin
12 and applying artificial intelligence to identify the most appropriate cosmetics or beauty product
13 for the consumer with those facial features and conditions.

14 73. In particular, the ‘595 Patent discloses a system and method that captures and
15 analyzes a person’s skin from a digital image of the consumer’s face to determine the consumer’s
16 skin feature characteristics and then recommends a cosmetics or beauty product based upon those
17 features through the consumer’s use of an electronic device with one or more processors and
18 memory to store one or more programs for execution by those processors.

19 74. During prosecution of the ‘595 Patent, the PTO examiner initially rejected
20 certain pending claims under AIA 35 U.S.C. § 102(a)(2) as being anticipated by U.S. Patent
21 No. 8,693,768 – the LaForgia reference – and certain pending claims as obvious under 35 U.S.C.
22 § 103 in view of LaForgia and Saito (US Application No. 2012/0223956).

23 75. After the patentee made some amendments to the pending claims, the PTO
24 examiner dropped the § 102(a)(2) rejection, continued some rejections under § 103, now based
25

1 upon a new combination of prior art -- LaForgia and Kinjo (U.S. Patent No.7,577,310), and
2 indicated that some claims were now allowable if rewritten in independent form.

3 76. These allowable claims, then Claims 6, 8, 11 and 17, contained the limitation
4 concerning the dividing of the display of the first digital image into two sides, with one side
5 displaying a simulated application of a cosmetic product and the other displaying no simulated
6 cosmetic product. This limitation can be seen in the now-issued Claim 5.

7 77. After one further amendment to the pending claims, the PTO examiner withdrew
8 all remaining rejections and allowed issuance of all pending claims, including issued Claim 5.

10 **L'OREAL'S INFRINGING CONDUCT IN COLLABORATION WITH OTHER**
11 **DIVISIONS AND DEPARTMENTS WITHIN THE L'OREAL GROUP OF COMPANIES**

12 78. Defendant L'Oréal USA is a subsidiary of L'Oreal S.A., a French corporation
13 incorporated in France as a Société Anonyme with its registered office in Paris and its corporate
14 headquarters and principal offices in Clichy, France. L'Oréal S.A. is the parent company of
15 several subsidiaries, which manufacture and distribute beauty, cosmetic, and personal hygiene
16 products throughout the world. L'Oreal USA is the largest subsidiary of L'Oréal S.A. and
17 was incorporated in 1953. *See* <https://www.loreal.com/en/usa/>. For years L'Oréal S.A. has had
18 global revenues exceeding \$40 billion, with approximately \$9 billion or more of those annual sales
19 made through L'Oreal USA. *See* <https://www.loreal.com/en/usa/>.

20 79. L'Oréal S.A. manufactures, distributes, and sells cosmetics and other beauty
21 products under numerous brand names – approximately 37 brands at the current time. *See* L'Oreal
22 2023 Annual Report. L'Oréal S.A. and its subsidiaries, including Defendant L'Oreal USA,
23 operate as a unified organization referred to as the “L'Oreal Group.” *See*
24 <https://www.loreal.com/en/usa/>. As L'Oréal S.A. states on its website: “L'Oreal has chosen a
25 unique strategy: Universalization.” [https://www.loreal.com/en/group/about-loreal/strategy-and-](https://www.loreal.com/en/group/about-loreal/strategy-and-model/)
26 [model/](https://www.loreal.com/en/group/about-loreal/strategy-and-model/). In this regard, L'Oréal S.A. states on its website that, “[f]or L'Oreal, universalization is
27
28

1 about having a truly global presence through a unique organization. We are strategically
2 concentrated yet operationally decentralized. Local teams are empowered.” *Id.* In this regard,
3 L’Oréal S.A. states that, “[t]o achieve that, we have developed a worldwide network of Research
4 & Innovation and marketing hubs, one for each of our strategic markets,” including the United
5 States. *Id.* L’Oreal USA receives overall strategic guidance regarding its operations from
6 L’Oréal S.A. L’Oréal S.A. sells and distributes its products in the United States exclusively
7 through L’Oreal USA.

8
9 80. In accordance with this organizational and operational structure, during the time
10 period relevant to the acts of infringement by L’Oreal USA alleged in this complaint, the divisions
11 and departments within the L’Oreal Group have acted as the agents of L’Oreal USA in the
12 furtherance of these infringing activities.

13 **L’OREAL USA’S WILLFUL INFRNGEMENT OF THE ASSERTED PATENTS**

14
15 81. On May 23, 2022, Mr. Chhibber, BTBP’s founder and Chief Executive Officer,
16 sent a letter to Dr. Balooch, Global Vice President of L’Oreal’s Technology Incubator, notifying
17 L’Oreal USA of BTBP’s 15 U.S. patents in the skin analysis and recommendation fields. In
18 particular, Mr. Chhibber notified Dr. Balooch of BTBP’s U.S. Patent No. 9,842,358, entitled
19 “Method for Providing Personalized Recommendations,” and U.S. Patent No. 9,542,595, entitled
20 “Systems and Methods for Recommending Cosmetic Products for Users with Mobile Devices.”
21 Mr. Chhibber explained to Dr. Balooch that these patents “relate generally to providing skin
22 treatment recommendations to an end user by analyzing a digital image of the user, identifying
23 relevant skin characteristics of the user, and selecting a skin treatment recommendation for the
24 user based on the identified skin characteristics.”

25
26 82. Mr. Chhibber pointed out to Dr. Balooch that these BTBP’s patents “are relevant
27 to the skin treatment recommendation software that is developed and offered by [L’Oreal].” Mr.
28

1 Chhibber identified, in particular, “L’Oreal’s ‘Skin Genius’s face mapping software’ which . . .
2 provides skin treatment recommendations to an end user by analyzing a digital image of the user,
3 identifying relevant skin characteristics of the user, and selecting a skin treatment recommendation
4 for the user based on the identified skin characteristics.” Mr. Chhibber informed Dr. Balooch that
5 he was “interested in having a discussion . . . to explore the possibility of BTBP and [L’Oreal]
6 entering into a mutually beneficial business arrangement” regarding the BTBP patents.

7 Notwithstanding L’Oreal USA’s extensive business dealings with BTBP between 2007-2014
8 regarding BTBP’s patented technology, L’Oreal USA and Dr. Balooch ignored Mr. Chhibber’s
9 letter and continued to use the technology claimed in the asserted patents in connection with its
10 use of skin treatment recommendation software and the sale of L’Oreal USA products. This
11 conduct by L’Oreal USA constitutes willful infringement of the asserted patents.
12

13 **FIRST CLAIM FOR RELIEF**
14 **(Infringement of the ‘358 Patent)**

15 83. L’Oreal USA has directly infringed at least Claims 16 and 18 of the ‘358 Patent by
16 using the methods claimed and patented in those claims literally or by the doctrine of equivalents.
17 In particular, L’Oreal USA has infringed these claims by using the claimed methods when
18 providing web pages and applications to individuals for use on its various websites that operate to
19 analyze the skin of a potential customer and identify a cosmetic product for a potential customer.
20

21 84. L’Oreal USA offers this cosmetic recommendation technology to encourage sales
22 of its products to its consumers.

23 85. L’Oreal USA operates and controls, and has operated and controlled, at least the
24 e-commerce interactive website www.vichyusa.com/skin-care-analysis-ai.html (the “Vichy
25 Website”), the application SkinConsult AI (“Vichy App”), the lorealparisusa.com website
26 including the Skin Genius application, and the Match My Shade Application (collectively the
27
28

1 “L’Oreal USA Virtual Beauty Tools”), the yslbeautyus.com/makeup-virtual-try-on.html website
2 including the Shade Finder application (collectively the “YSL Website and Apps”), the
3 <https://www.giorgioarmanibeauty-usa.com/face-maestro/face-maestro.html> website, Face
4 Maestro application, and Skin Precision Analyzer application (collectively the “Armani Beauty
5 Website and Apps”), the <https://www.maybelline.com/virtual-makeover-makeup-tools> website
6 Foundation Shade Finder application (the “Maybelline Website and Apps”), the
7 <https://www.lancome-usa.com/beauty-services.html> website, the E-Shade Finder application, the
8 E-Skin Expert application, and E-Youth Finder application (collectively, the “Lancome Website
9 and Apps”), the <https://www.valentino-beauty.us/services.html> website Virtual Shade Finder
10 application, (the “Valentino Website and Apps”), and the [https://www.laroche-posay.us/find-](https://www.laroche-posay.us/find-your-routine/myroutine-ai-analysis.html)
11 [your-routine/myroutine-ai-analysis.html](https://www.laroche-posay.us/find-your-routine/myroutine-ai-analysis.html) website MyRoutine application and Spot Scan
12 application (collectively, the “La Roche Website and App.”). While BTBP has identified the
13 above websites and applications, BTBP accuses all websites and applications operated and
14 controlled by L’Oreal USA, whether created previously or in the future, with similar or identical
15 functionality as Accused Instrumentalities or similar instrumentalities.
16

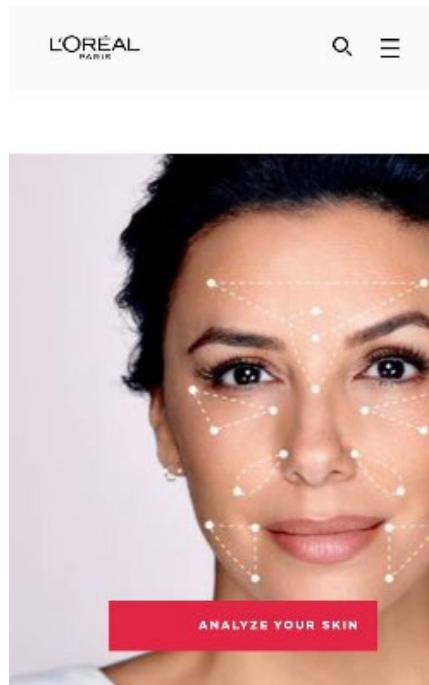
17
18 86. The above websites and applications in Paragraph 85 (all collectively “L’Oreal’s
19 ‘358 Accused Instrumentalities”) are all owned and operated by L’Oreal USA. *See* Exhibit 4.

20 87. When a consumer uses an electronic device to access L’Oreal USA’s ‘358 Accused
21 Instrumentalities, L’Oreal USA has performed a method for providing prioritized skin treatment
22 recommendations to a user. Moreover, Defendant also directly infringed the ‘358 Patent when its
23 employees internally tested or used the ‘358 Accused Instrumentalities or other similar
24 instrumentalities.
25

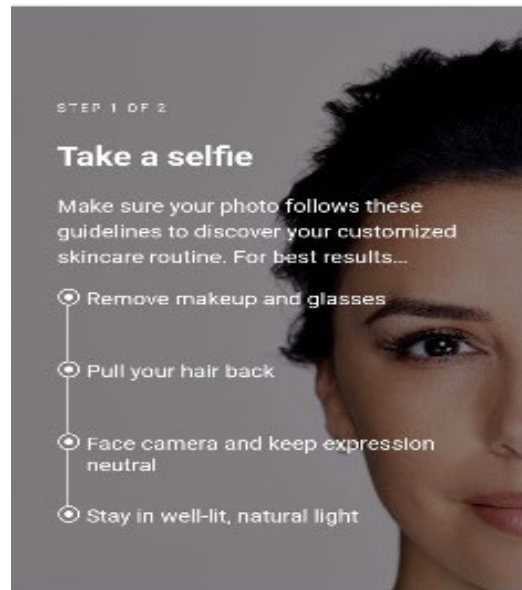
26 88. If the ‘358 Accused Instrumentalities or similar instrumentalities are claimed by
27 Defendant not to be owned and operated directly by Defendant, Plaintiff alleges, upon information
28

1 and belief, that Defendant indirectly infringes the '358 Patent under an inducement to infringe or
2 contributory infringement theory because the platform is being owned, operated and controlled
3 indirectly by Defendant and for Defendant's benefit.

4 89. Since at least 2018, L'Oreal USA has used a method via the '358 Accused
5 Instrumentalities for analyzing the skin of a subject and identifying a cosmetic product for the
6 subject.

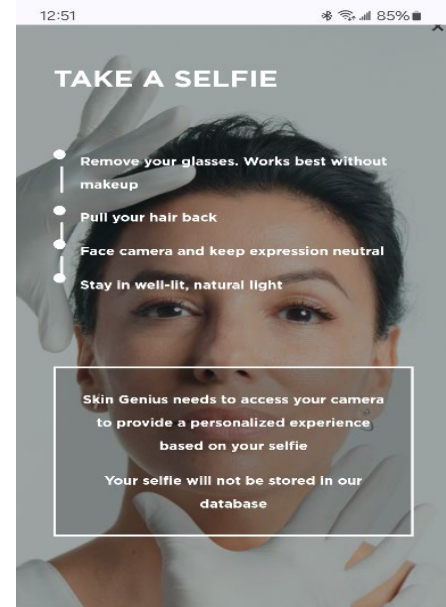


19 90. An exemplary method performed by L'Oreal USA via one '358 Accused
20 Instrumentality (in this case, the L'Oreal Skin Genius Application) has included the step of
21 receiving from an electronic device image data of a user's face, wherein the electronic device
22 comprises a camera and a display, wherein the image data is obtained via said camera, and wherein
23 said electronic device presents on the display a photo guide indicating how the user's face should
24 be positioned with respect to the camera when the image data is obtained. As can be seen in the
25 figures below, a guide for how to obtain a photo is displayed to a user:
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TAKE A SELFIE

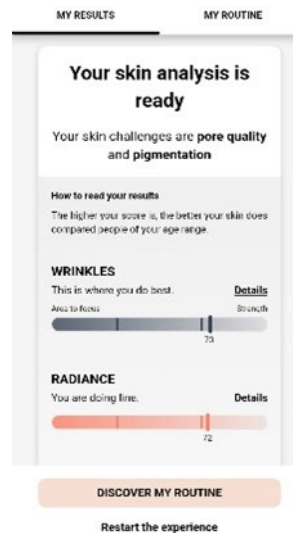
Upload picture



TAKE A SELFIE

UPLOAD A PICTURE

91. The exemplary method performed by L'Oreal USA via the Skin Genius Application has included the step of transforming via a computer said image data via image processing into measurements to identify at least two skin characteristics of the user from the received image data. This can be seen in the figure below, with at least the identification of pore quality, pigmentation, wrinkles, and radiance:



93. The exemplary method performed by L'Oreal via the Skin Genius Application has included the step of calculating a severity rating for each of the at least two user skin characteristics. See the above figure.

94. The exemplary method performed by L'Oreal USA via the Skin Genius Application has calculated a severity rating for each of the at least two user skin characteristics by accessing stored population information comprising measurements for at least two skin characteristics of a population of the same type as the at least two skin characteristics of the user, wherein each of the measurements for the at least two population skin characteristics comprises a mean value and a standard deviation value. As can be seen in the below figure, L'Oreal USA explains that the user's image is compared against many other images to determine how the user's skin characteristics compare to others:

What is Skin Genius?

PLAINTIFF BTBP'S ORIGINAL COMPLAINT

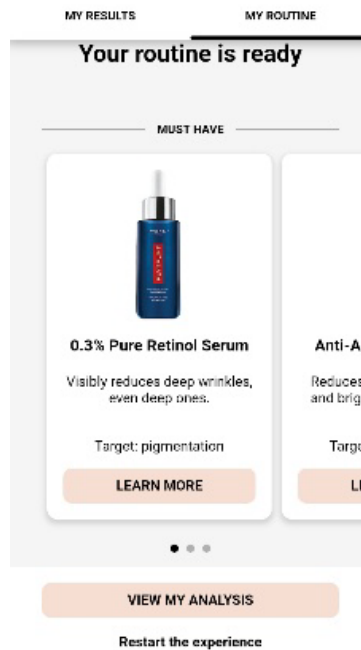
1 95. The exemplary method performed by L'Oreal USA via the Skin Genius
2 Application has therefore calculated a severity rating for each of the at least two user skin
3 characteristics by comparing each of the measurements of the at least two user skin characteristics
4 to the measurements of same type population skin characteristic.

5 96. Similarly, the exemplary method performed by L'Oreal USA via the Skin Genius
6 Application has calculated a severity rating for each of the at least two user skin characteristics by
7 determining by how much each of the measurements of the at least two user skin characteristics
8 deviates from the mean value and the standard deviation value of the same type population skin
9 characteristic. Additionally, a person skilled in the art would understand that training the AI
10 necessary to perform the functions of the Accused Instrumentality requires comparing its
11 performance repeatedly to the clinically graded images. In compiling the data of the clinically
12 graded images, the standard deviation is used to assess the distribution of data. In cases where
13 there is a lack of correlation between similar clinically graded images, an average value is used.

14 97. The exemplary method performed by L'Oreal USA via the Skin Genius
15 Application has calculated a severity rating for each of the at least two user skin characteristics by
16 assigning higher severity rating to the user skin characteristic which deviates furthest than at least
17 one standard deviation of the same type population skin characteristic. A person skilled in the art
18 would understand that clinical grading of the images establishes a set of criteria to grade the
19 severity of a subject's skin characteristic. The further from the baseline of healthy/clear skin a
20 subject has, the higher the severity rating of the skin characteristic. The labels are used to train
21 the AI to assign higher severity to users who deviate most from the healthy/clear skin baseline
22 score.

23 98. The exemplary method performed by L'Oreal USA via the Skin Genius
24 Application has calculated a severity rating for each of the at least two user skin characteristics
25

by, for a subset of the user skin characteristics with the highest severity rating, selecting one or more skin treatment recommendations from stored skin treatment recommendations based on the subset of the user skin characteristic with the highest severity rating. This can be seen in the “my routine” recommendations tab of the Accused Instrumentality, which recommends several products as skin treatments to address the user’s skin characteristics with the highest severity (labeled “skin challenges” above). See the figure below for the “my routine” recommendations:



99. The exemplary method performed by L’Oreal USA via the Skin Genius Application has calculated a severity rating for each of the at least two user skin characteristics by providing to the electronic device the selected one or more skin treatment recommendations. See above figure, which appears on the electronic device of a user.

100. The exemplary method performed by L’Oreal USA via the Skin Genius Application has utilized at least one skin characteristic within the list contained in Claim 18: number of wrinkles, number of age spots, quality of age spots, percentage of facial area covered by age spots, number of hyperpigmentation spots, quality of hyperpigmentation spots, percentage

of facial area affected by hyperpigmentation spots, number of crow's feet, number of fine lines, number of deep lines, oiliness of skin, dryness of skin, pigment intensity, pigment darkness, pigment evenness, visibility of pores, number of large pores, lip color, lip line curvature, lip border strength, lip line smoothness, lip fullness, acne lesion visibility, color of acne scars, visibility of acne scars, presence of melasma, percentage of facial area covered by melasma, darkness of melasma, ultraviolet damage, and skin tone.

101. Since at least 2018, L'Oreal USA has continued to put this exemplary method into service.

102. While only one example of one '358 Accused Instrumentality has been provided above, L'Oreal USA's use of this '358 Accused Instrumentality is widespread and in use throughout its various webpages and applications as detailed in Paragraph 85 above.



Vichy App

1 103. The duty to mark under 35 U.S.C. § 287 is inapplicable to the asserted method
2 claims of the '358 Patent, and there are no unmarked "patented articles" that were sold or offered
3 for sale by BTBP or its licensees of the '358 Patent that were subject to § 287.

4 104. BTBP has been damaged by L'Oreal USA's infringing activities.

5 **SECOND CLAIM FOR RELIEF**
6 **(Infringement of the '595 Patent)**

7 105. L'Oreal USA has directly infringed at least Claim 5 of the '595 Patent by using the
8 method claimed therein. In particular, L'Oreal USA has infringed Claim 5 by using the claimed
9 method, literally or by the doctrine of equivalents, when providing web pages and applications to
10 individuals for use on its various websites that operates to analyze the skin of a potential customer
11 and display a cosmetic product for a potential customer.

12 106. L'Oreal USA offers this virtual makeup try-on technology to encourage sales of its
13 makeup products to its consumers.

14 107. L'Oreal USA operates and controls, and has operated and controlled, at least the
15 e-commerce interactive website lorealparisusa.com including the MakeUp Try It On application
16 and Beauty Hub physical retailer screen (collectively the "L'Oreal USA Virtual Beauty Tools"),
17 the nyxcosmetics.com/try-it-on.html website and NYX Try It On application (collectively the
18 "NYX Website and App"), the yslbeautyus.com/makeup-virtual-try-on.html website including the
19 Virtual Try On application (collectively the "YSL Website and Apps"), the
20 <https://www.giorgioarmanibeauty-usa.com/face-maestro/face-maestro.html> website, Face
21 Maestro application and Virtual Try-On application, (collectively the "Armani Beauty Website
22 and Apps"), the <https://www.maybelline.com/virtual-makeover-makeup-tools> website, Virtual
23 Try-On application and Microsoft Teams Virtual Try-On application (collectively the Maybelline
24 Website and Apps), the <https://www.lancome-usa.com/beauty-services.html> website and Virtual
25 Try-On application and Microsoft Teams Virtual Try-On application (collectively the Maybelline
26 Website and Apps), the <https://www.lancome-usa.com/beauty-services.html> website and Virtual
27 Try-On application and Microsoft Teams Virtual Try-On application (collectively the Maybelline
28 Website and Apps), the <https://www.lancome-usa.com/beauty-services.html> website and Virtual

1 Makeup Try-On application (collectively, the “Lancome Website and Apps”), the
2 https://www.shuueemura-usa.com/en_US/makeup/virtual-services/virtual-try-on/ website and
3 Virtual Try-On application (collectively, the “Shu Uemura Website and App”), the
4 <https://www.urbandecay.com> website and Virtual Try-On application (collectively, the “Urban
5 Decay Website and App”), and the <https://www.valentino-beauty.us/services.html> website and the
6 Virtual Try-On application (collectively, the “Valentino Website and Apps”). While BTBP has
7 identified the above websites and applications, BTBP accuses all websites and applications
8 operated and controlled by L’Oreal USA, whether created previously or in the future, with similar
9 or identical functionality as Accused Instrumentalities or similar instrumentalities.

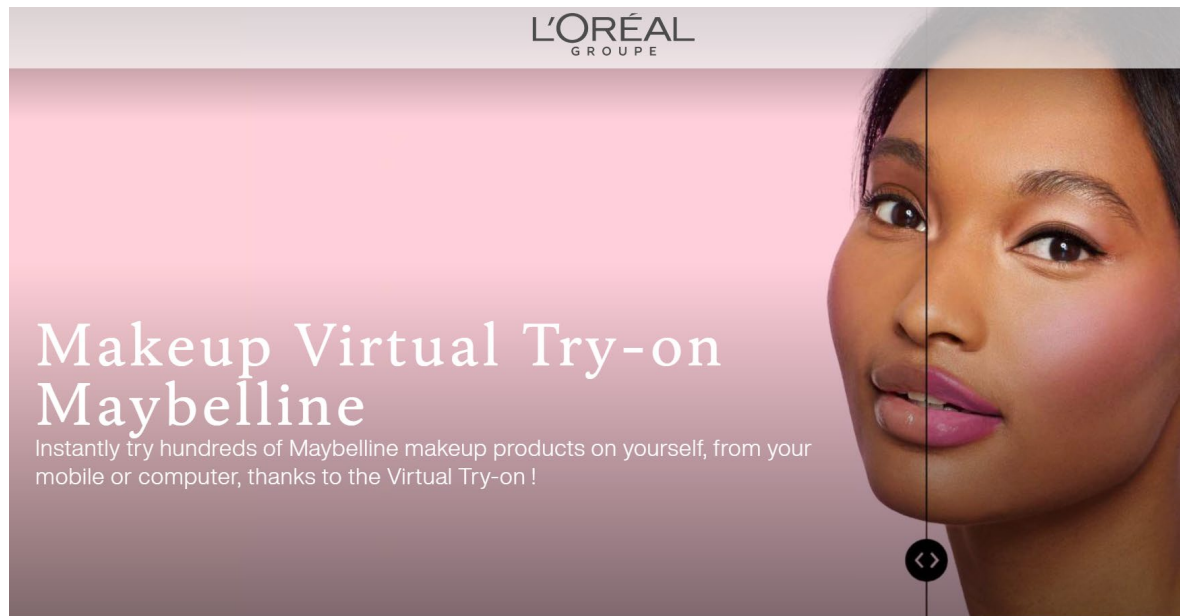
11 108. The above websites and applications in Paragraph 107 (all collectively “L’Oreal’s
12 ‘595 Accused Instrumentalities”) are all owned and operated by L’Oreal USA. *See* Exhibit 4.

13 109. When a consumer uses an electronic device to access L’Oreal USA’s virtual
14 makeup try-on technology, L’Oreal USA has performed a method for analyzing a consumer’s skin
15 from a digital image of the consumer’s face to determine the consumer’s skin color and identify a
16 cosmetic product. Moreover, Defendant also directly infringe the ‘595 Patent when its employees
17 internally test or use the ‘595 Accused Instrumentalities or other similar instrumentalities.

19 110. If the ‘595 Accused Instrumentalities or similar instrumentalities are claimed by
20 Defendant not to be owned and operated directly by Defendant, Plaintiff alleges, upon information
21 and belief, that Defendant indirectly infringes the ‘595 Patent under an inducement to infringe or
22 contributory infringement theory because the platform is being owned, operated and controlled
23 indirectly by Defendant and for Defendant’s benefit.

25 111. Since at least 2018, L’Oreal USA has used at least one method via the ‘595
26 Accused Instrumentalities for analyzing the skin of a subject and identifying a cosmetic product
27 for the subject. An exemplary method performed by L’Oreal USA via one ‘595 Accused
28

Instrumentality (in this case, the Maybelline Website and Apps) is provided below, but each of the '595 Accused Instrumentalities operate in a similar manner and infringe the '595 Patent.



How does it work?

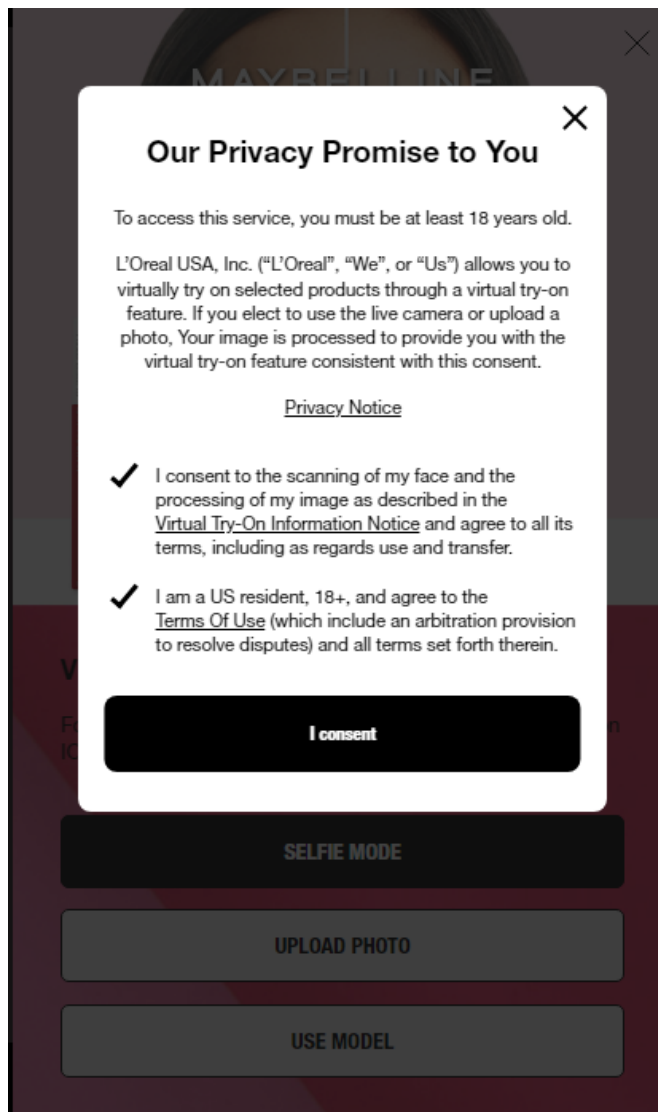
Available at maybelline.com:

- Choose the product you want to try on
- Find good natural light
- Launch your live camera or upload a picture
- Select the shade you would like to try
- And see instantly the result on yourself
- You can see the result of the before/after makeup application, compare between 4 different shades, and share your selfie on social media to ask your friends what they think about your new style.

112. The methods utilized by the exemplary '595 Accused Instrumentality for analyzing the skin of a subject and identifying a cosmetic product for the subject utilized electronic devices with one or more processors and memory storing one or more programs for execution by the one or more processors. The Accused Instrumentality comprises, at least in part, software that can run on any electronic device such as a mobile telephone, a smart phone, a tablet computer, a personal digital assistant, a laptop, or a desktop. Each of these devices necessarily contains one or more processors and memory storing one or more programs for execution by the one or more processors. Additionally, these devices may take the form of servers operated by, or on behalf of, L'Oreal USA

for the purposes of operating and providing the exemplary `595 Accused Instrumentality and the electronic devices may be cellular phones or computers utilized by a user at the direction and control of L'Oreal USA for the benefit of L'Oreal USA.

113. The exemplary `595 Accused Instrumentality calibrates colors of a first digital image, wherein the first digital image depicts at least a portion of a face of the subject, and the first digital image includes a plurality of pixels. As explained by L'Oreal USA, the image of a user (whether through the live camera or through upload) is “processed to provide [a user] with the virtual try-on feature.” See <https://www.maybelline.com/virtual-try-on-makeup-tools>:

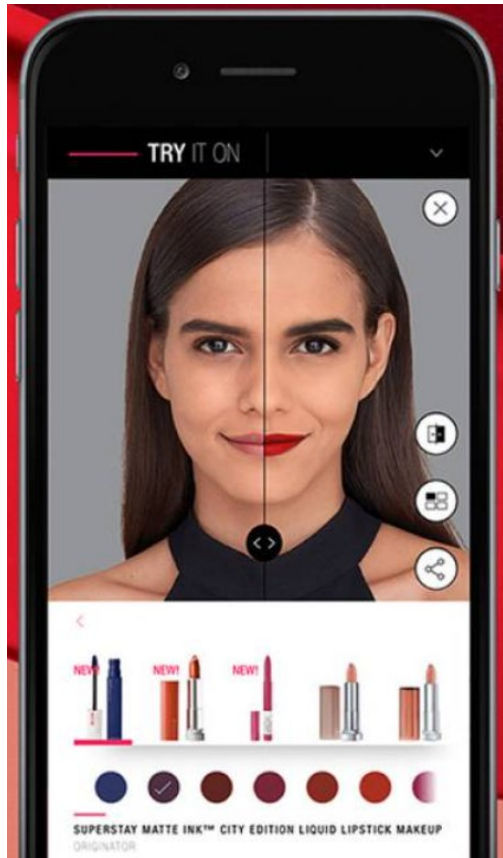


1 114. As readily acknowledged by L’Oreal USA on its website at
2 <https://www.loreal.com/en/articles/science-and-technology/makeup-virtual-try-on-maybelline>,
3 the application will collect an image of a user, whether live or static. As a cosmetic product may
4 appear differently once applied to different complexions (i.e., skin tone) in real life, a person of
5 skill in the art would understand that L’Oreal, through the L’Oreal server, is calibrating the colors
6 of the user’s image. Additionally, L’Oreal’s application calibrates the colors of the user image to
7 identify where to apply their virtual makeup (i.e., to identify lips or eyes).

8
9 115. This processing by L’Oreal USA inherently includes the calibrating of colors. To
10 the extent this element is in dispute, upon information and belief discovery will reveal that the
11 Accused Instrumentality calibrates colors of the first digital image.

12 116. The first digital image is captured by and through L’Oreal USA’s exemplary ‘595
13 Accused Instrumentality, and this first digital image depicts at least a portion of a face of the
14 subject and includes a plurality of pixels. This first digital image is captured by selecting either
15 “selfie mode” or “upload photo,” each of which allow a user to provide L’Oreal USA’s exemplary
16 ‘595 Accused Instrumentality with an image of their face. These images inherently include a
17 plurality of pixels.
18

19 117. The exemplary method performed by L’Oreal USA via the Maybelline Website
20 and Apps has included the step of displaying the first digital image.
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118. As can be seen in the figure above, the image of a potential customer is displayed on an electronic device.

119. The exemplary method performed by L'Oreal USA via the Maybelline Website and Apps has included the step of dividing the display of the first digital image into two sides, wherein one side of the first digital image is displayed with no cosmetic product applied, and one side of the first digital image is displayed with a simulated application of a cosmetic product, as can be seen in the figure above.

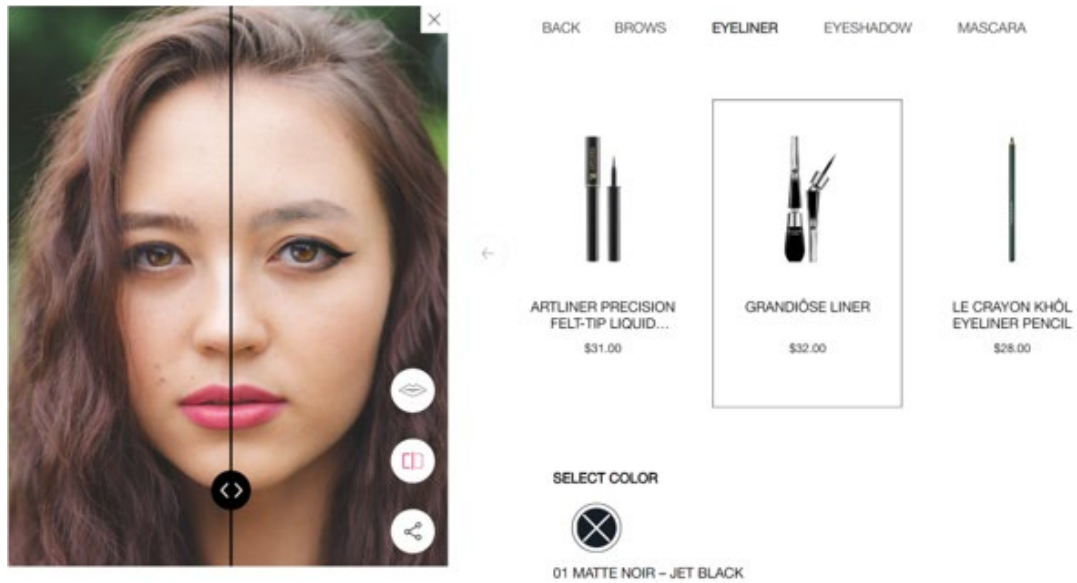
120. The exemplary method performed by L'Oreal USA via the Maybelline Website and Apps shows two sides of the user's face, one without make-up, and one with simulated make-up. Further, the Accused Instrumentality also shows two sides of the image, one without make-up (background), and one with simulated make-up (foreground, i.e., the user's face).

1 121. The exemplary method performed by L’Oreal USA via the Maybelline Website
2 and Apps transfers the first digital image. The image is transferred to L’Oreal USA upon consent
3 by the user and transferred back to the user for display in the figure above.

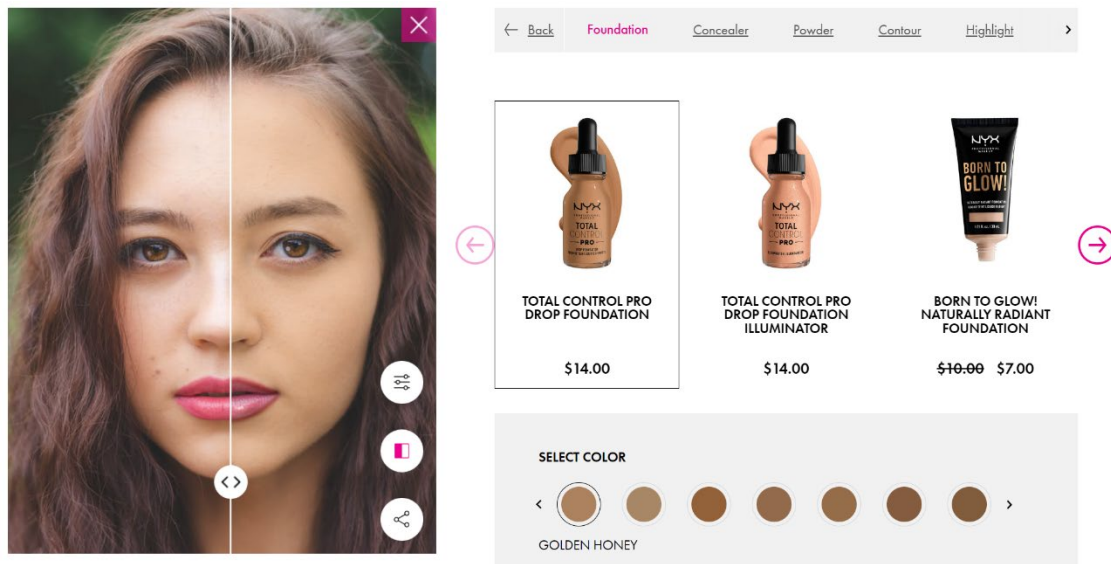
4 122. The exemplary method performed by L’Oreal USA via the Maybelline Website
5 and Apps has included the step of transferring information of a cosmetic product, wherein skin
6 pixels in the plurality of pixels are identified, color space values are identified from the skin pixels,
7 and the cosmetic product is identified at least based on the color space values. As can be seen in
8 the figure above, different shades of makeup are offered to the user for virtual try-on. This is
9 completed through the transferring of information concerning those shades of makeup, identifying
10 the parts (or pixels) of the customer image that should change color based on color space values
11 of the customer’s skin (i.e., identifying lips and eyes). The cosmetic products are identified based
12 on the color space values for selection by the user. This is done to realistically simulate the
13 cosmetic product on not just any face, but the face of the user.
14

15 123. To the extent that any required steps of the claim occurred on a device in the
16 possession, custody or control of and used by a third party, L’Oreal USA performed those steps
17 because it initiated and controlled the performance of those steps.
18

19 124. While only one example of one Accused Instrumentality has been listed above,
20 L’Oreal USA’s use of this Accused Instrumentality is widespread and in use throughout its various
21 webpages and applications, as can be seen in the figures below:
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Lancome Website and Apps



NYX Website and App

125. The duty to mark under 35 U.S.C. § 287 is inapplicable to the asserted method claims of the '595 Patent. There is no applicable marking requirement that has not been complied with.

126. BTBP has been damaged by L'Oreal USA's infringing activities concerning the '595 Patent.

DEMAND FOR JURY TRIAL

127. Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, BTBP hereby demands a trial by jury of all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, BTBP requests the following relief:

- (a) A judgment that the asserted patents are valid and enforceable,
- (b) A judgment in favor of BTBP that L'Oreal USA has directly or indirectly infringed one or more claims of the asserted patents;
- (c) An accounting of damages owed to BTBP;
- (d) A judgment and order requiring L'Oreal USA to pay BTBP damages adequate to compensate for infringement under 35 U.S.C. § 284, which, in no event shall be less than a reasonable royalty for its usage made of the inventions of the asserted patents, including pre- and post-judgment interest and costs;
- (e) A judgment awarding BTBP up to treble damages for Defendant's willful infringement;
- (f) If necessary to adequately compensate BTBP, a declaration that this case is exceptional and that BTBP be awarded additional damages and/or attorney fees under that declaration or under another basis in the law;
- (g) An award of costs and expenses that BTBP incurred in prosecution of this action;
- (h) A judgment awarding BTBP post-judgment royalties to the extent applicable; and
- (i) Any and all such further necessary or proper relief as this Court may deem just or equitable.

1 Dated: November 12, 2024

Respectfully,

2
3 By: /s/Christopher M. Joe
Christopher M. Joe

4 *Attorney for Plaintiff*
5 *Brightex Bio-Photonics, LLC*

6
7
8 **ATTESTATION**

9 I, Jamie L. Dupree, hereby attest that concurrence in the filing of PLAINTIFF BRIGHTEX BIO-
10 PHOTONICS, LLC'S COMPLAINT FOR PATENT INFRINGEMENT has been obtained from
11 all counsel with conformed signatures above.

12
13 Dated: November 12, 2024

FUTTERMAN DUPREE DODD CROLEY
MAIER LLP

14
15 /s/ Jamie L. Dupree
Jamie L. Dupree

16 *Local Counsel for Plaintiff Brightex Bio-*
17 *Photonics, LLC*

1 ADDITIONAL COUNSEL FOR PLAINTIFF
2 BRIGHTEX BIO-PHOTONICS, LLC

3 Kenneth P. Kula (*Pro Hac Vice* to be filed)
4 Michael W. Doell (*Pro Hac Vice* to be filed)
5 **BUETHER JOE & COUNSELORS, LLC**
6 1700 Pacific Avenue, Suite 4750
7 Dallas, Texas 75201
8 Telephone: 214-466-1270
9 Email: Ken.Kula@BJCIPLaw.com
10 Mike.Doell@BJCIPLaw.com

11 Scott Hemingway (*Pro Hac Vice* to be filed)
12 **HEMINGWAY & HANSEN, LLP**
13 1700 Pacific Ave., Suite 1820
14 Dallas, TX 75201
15 Telephone: 214-292-8301
16 Email: shemingway@hh-iplaw.com

17 LOCAL COUNSEL FOR PLAINTIFF
18 BRIGHTEX BIO-PHOTONICS, LLC

19 Jamie L. Dupree (SBN CA: 158105)
20 Jaime G. Touchstone (SBN CA: 233187)
21 **FUTTERMAN DUPREE DODD CROLEY MAIER LLP**
22 601 Montgomery Street, Suite 1210
23 San Francisco, CA 94111
24 Telephone: (415) 399-3840
25 Facsimile: (415) 399-3838
26 Email: jdupree@fddcm.com
27 jtouchstone@fddcm.com
28